

# Peripheral Neuropathy

## What is peripheral neuropathy?

Peripheral neuropathy is the direct result of damage to the peripheral nerves and nervous system. The condition displays a unique set of symptoms that ranges in pain degree and level. The condition is not one single problem or disease, but rather a term used to categorize a number of issues resulting from damage to the peripheral nervous system.

When the peripheral nerves become damaged due to a variety of different problems, messages cannot be sent from the brain to other parts of the body properly. The peripheral nerves extend from the brain and spinal cord to areas of the body, such as the arms, legs, feet and hands.



## What are the Symptoms of Neuropathy?

Symptoms of peripheral neuropathy vary from patient to patient. Numbness, tingling and prickling sensations in the fingers and toes are often the first sign of neuropathic symptoms.

Pain usually worsens at night and can be constant or periodic in nature. The pain is generally experienced along both sides of the body equally, such as in both hands or in both feet. Gradual progression is common and patients with peripheral neuropathy may experience an increase in pain over years if left untreated.

Other symptoms associated with peripheral neuropathy include:

- Sharp and jabbing pains sometimes described as electric-shock pain
- Weakness in muscles
- Difficulty sleeping due to pain at night
- Loss of balance and decreased coordination
- Difficulty moving extremities
- Sensitivity to touch
- Burning sensations

## What Causes Peripheral Neuropathy?

There are a number of different causes of peripheral neuropathy, including the following:

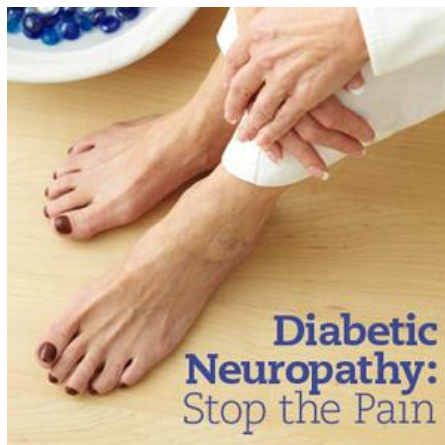
- Diabetes
- Infections
- Inflammation
- Immune disorders (auto-immune)
- Exposure to poor nutrition accompanied with alcohol abuse
- Medications

Diabetes is one of the most common causes of peripheral neuropathy with an estimated 50% of all diabetic patients developing some form of the condition at some stage during their lives.

## How is Peripheral Neuropathy Diagnosed?

Peripheral neuropathy can be challenging to diagnose and usually requires a complete physical examination, medical history evaluation and neurological testing. Your pain management doctor will assess your symptoms and gather a complete family and medical history. A physical exam will be conducted.

EMG and nerve conduction velocity tests may be needed to further diagnose the problem. Autonomic tests, nerve and muscle biopsies, skin biopsies, and imaging such as an MRI and CT scan may be required to accurately define the condition and the cause for peripheral neuropathy symptoms.



Depending on the outcome of neurological evaluations, your doctor may require further testing. Patience is needed through the process, so that your doctor can effectively find the cause and design a proper treatment plan for the condition.

## What Treatment Options are Available for Peripheral Neuropathy?

Chronic pain associated with peripheral neuropathy is difficult to live with. If you experience any of the characteristics associated with peripheral neuropathy it is recommended that you see a pain management specialist who can help you with an effective treatment plan.

Below are some of the recommended treatments available for peripheral neuropathy pain.

- **Medications**

Pain relief medications are one form of treatment used in patients with peripheral neuropathy. The pain relievers may be used to treat mild forms of neuropathy as well as severe symptoms. Stronger prescriptions, including narcotics, may be required when other forms of mild drugs fail to be effective in relieving pain.



A pain patch, or lidocaine patch may also be used to treat neuropathy. The pain patch contains a topical anesthetic that helps relieve pain. Patients may use up to four patches a day, or as recommended by their doctor.

Other medications useful in the treatment of neuropathy include antidepressants and anti-seizure medications, along with nerve membrane stabilizers like Neurontin. Your doctor will help you determine which medication best suits your symptoms.



- **Physical therapy**

Physical therapy is useful in the treatment of pain in general. TENS (nerve stimulation) therapy can be used to treat pain associated with neuropathy. Tiny electrodes emit a pulsating and gentle electrical current into the affected area providing pain relief (Woolf, et al., *Pain*, 2001).

Physical therapy should be conducted regularly in order to be effective and reduce the symptoms associated with this condition. Desensitization and massage can help as well.

- **Alternative therapy**

Other forms of therapy for chronic pain associated with neuropathy includes stretching, exercise, and massage. Your pain specialist can help design a treatment plan that is fitting for your condition and provides you with the best possible outcome.

Acupuncture has been shown to reduce symptoms of neuropathy in about 75% of all patients who receive this alternative therapy for peripheral neuropathy. Several treatments may be needed before pain is reduced (Brannigan, et al., *Peripheral Neuropathies Journal*, 2011).

As a last resort, a spinal cord stimulator may be tried. This procedure has been shown to work very well in over 80% of patients for significant pain relief. In addition, most patients are able to reduce the amount of pain medication necessary, along with well over half being shown to get back almost all sensation in the affected feet! (study out of Evansville IN, presented at AAPM 2012).

### **What are the Outcomes?**

While there is no cure for peripheral neuropathy, gradual relief from painful symptoms is possible with proper treatment. The earlier the condition is treated, the better the outcome. Most patients who receive treatment from a pain center experience some degree of pain relief.